

Ctenochasma

Ctenochasma (meaning "comb jaw") is a genus of Late Jurassic ctenochasmatid pterosaur belonging to the suborder Pterodactyloidea. Three species are currently recognized: *C. roemeri* (named after Friedrich Adolph Roemer), *C. taqueti*, and *C. elegans*. Their fossilized remains have been found in the Solnhofen Limestone of Bavaria, Germany, the "Purbeck Group" of northeastern Germany, and the Calcaires tâchetés of eastern France.

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History



Fossil specimen of a young juvenile *C. elegans*

However, a year earlier, another, more complete specimen probably belonging to the same species was described and named *Pterodactylus elegans* by Wagner. Because the species name *elegans* was named before *gracile*, the species is now known as *Ctenochasma elegans*. Another specimen originally attributed to a small or juvenile *Pterodactylus*, *P. brevirostris* (Wellnhofer's "example 29", which was later placed in its own genus *Ptenodracon*), probably represents a young juvenile *Ctenochasma* based on similar wing bone proportions that differ from the similar *Aurorazhdarcho*.^[3] An additional species, *C. porocristata*, was named by Paul de Buissoné in 1981. However, it was differentiated

Ctenochasma

Temporal range:

Late Jurassic 150–145 Ma

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Fossil specimen of a juvenile *C. elegans*

Scientific classification

Kingdom:	Animalia
Phylum:	Chordata
Order:	†Pterosauria
Suborder:	†Pterodactyloidea
Family:	†Ctenochasmatidae
Subfamily:	†Ctenochasmatinae
Genus:	† <i>Ctenochasma</i> Meyer, 1852

Type species

†*Ctenochasma roemeri*

Meyer, 1852

Species

▪ †*C. roemeri*

Meyer, 1852

▪ †*C. elegans*

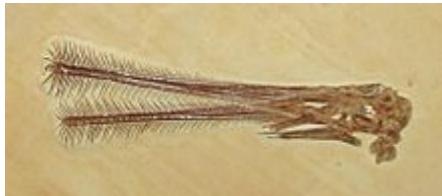
(Wagner, 1861) [originally *Pterodactylus*]

mainly by the presence of a crest along the snout, which has since been shown to be a feature related to growth or sex, rather than species.^[4]

A fourth species of *Ctenochasma* was first described (but not named) by Philippe Taquet in 1972.^[5] A single specimen, consisting of a partial skull with complete brain case, was found in France and housed in the collections of the Saint-Dizier Museum. Detailed comparison to other *Ctenochasma* specimens in 2004 confirmed that it was a new species.^[6] In honor of Taquet's work on the specimen, Christopher Bennett named the species *C. taquetti* in 2007.^[7]

Although researchers in the late 1990s and early 2000s, including Bennett and Jouve, suggested that all these species probably represented growth stages on just one kind of *Ctenochasma*, in a more comprehensive 2007 study, Bennett demonstrated that three distinct species could be recognized based on the number and slenderness of the teeth, which varied across all growth stages. *C. roemeri*, the earliest species, is characterized by its relatively low number of only moderately slender teeth. The later *C. taquetti* had a moderate number of slender teeth, and the last species, *C. elegans*, had a high number of very slender teeth. These three species, arranged chronologically, probably represent a single evolutionary lineage in which the filter-feeding apparatus was gradually refined.^[7]

Description



Fossil skull of a subadult *C. elegans*

Ctenochasma is distinguished mainly by its numerous (over 400 in adults) long, thin, curved and closely packed teeth, which lined its elongated and narrow snout. The teeth were so closely packed that they formed a comb, and in adults they projected outward away from the jaws, forming a basket; traditionally, these are thought to indicate a filter feeding lifestyle, straining water through the teeth in order to capture and eat small invertebrates, but unlike the related Pterodaustro it lacks adaptations that would form a pumping mechanism. Instead,

the spatulate profile formed by the teeth probably indicate a spoonbill-like lifestyle, increasing the surface area of the jaws in order to catch small prey.^[8] The snout curved slightly upward and was rounded at the tip, and the teeth were restricted to the front half of the jaws.^[6]

The smallest species, *Ctenochasma elegans*, had a wingspan of only about 25 centimetres (9.8 in). *Ctenochasma* is distinguished by its mouth which contained as many as 260 long, thin comb-like teeth. Adult *Ctenochasma* had a bony crest along the skull, though this is not found in juveniles.^[4]

Comparisons between the scleral rings of both *Ctenochasma elegans* and *Ctenochasma taquetti* and modern birds and reptiles suggest that these taxa may have been nocturnal, and may have had activity patterns similar to modern nocturnal seabirds. This may also indicate niche partitioning with contemporary pterosaurs inferred to be diurnal, such as *Pterodactylus* and *Scaphognathus*.^[9]

Compared to other ctenochasmatoids, it had larger wings, and may have displayed a flying style comparable to that of modern skuas.^[8]

▪ †*C. taquetti*

Bennett, 2007

Synonyms

Genus synonymy

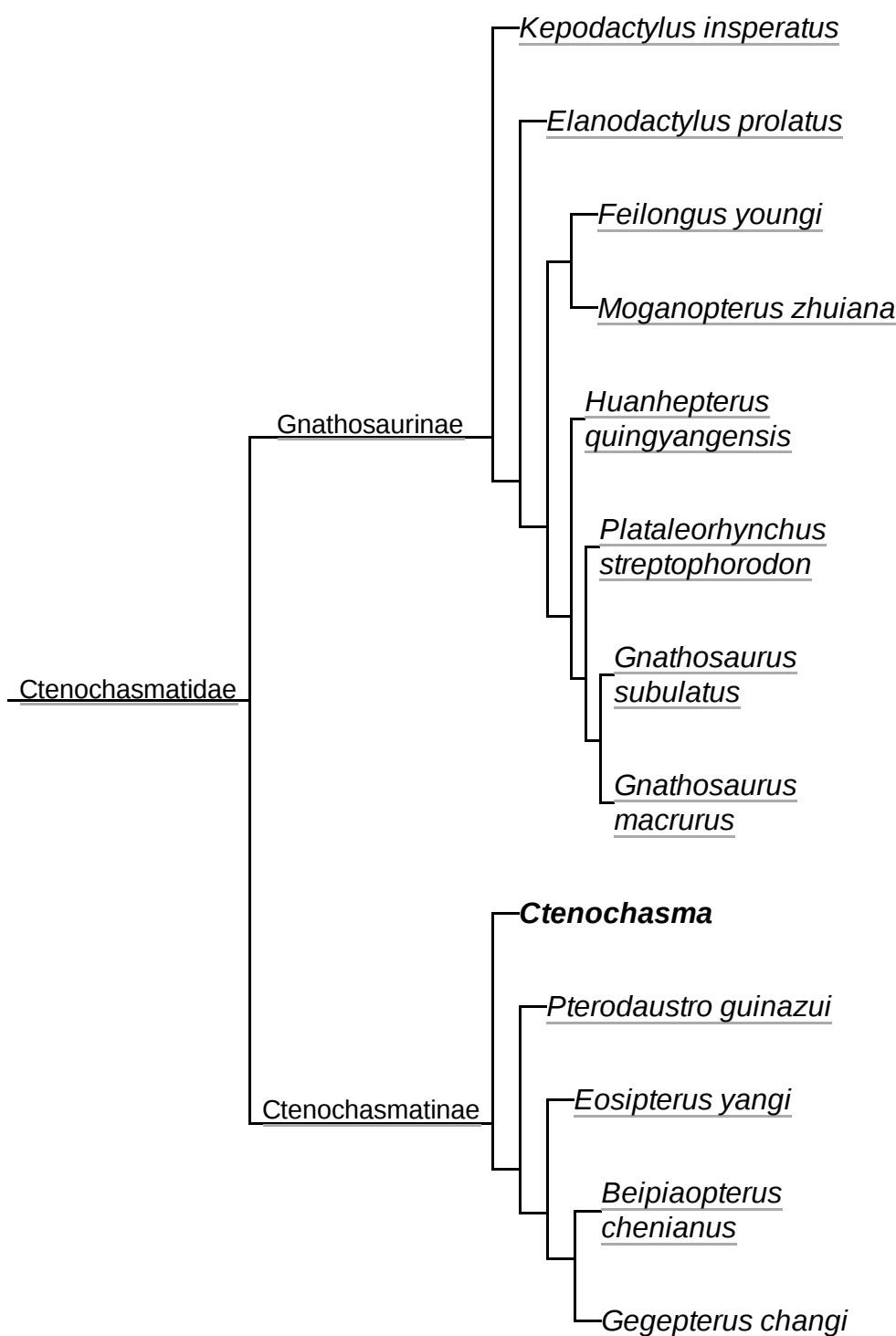
- *Ptenodracon*
Lydekker, 1888

Synonyms of *C. elegans*

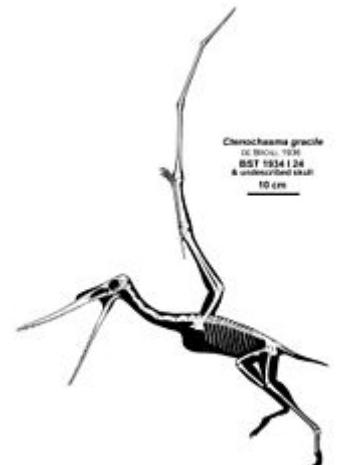
- *Ornithocephalus brevirostris*
Sömmering, 1817
- *Pterodactylus brevirostris*
(Sömmering, 1817)
- *Ptenodracon brevirostris*
(Sömmering, 1817)
- *Pterodactylus elegans*
Wagner, 1861

Classification

Cladogram following Andres, Clark & Xu, 2014.^[10]



Fossil specimen of a young juvenile *C. elegans*



Skeletal reconstruction

See also

- [List of pterosaur genera](#)
- [Timeline of pterosaur research](#)

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